

Revising the chromosome-specific probes of white hawk (*Leucopternis albicollis*)

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Introduction

Leucopternis albicollis is a diurnal bird of prey with extensive karyotype reorganization. Chromosome-specific probes from this species have been used successfully to detect intrachromosomal rearrangements in different species of bird since 2010. However, some gaps were detected using probes obtained from the first set. Here, we have obtained a new set of whole chromosome probes in order to improve the previous one; also we have performed experiments using bacterial artificial chromosome (BAC) from chicken microchromosomes.

Methods and Results

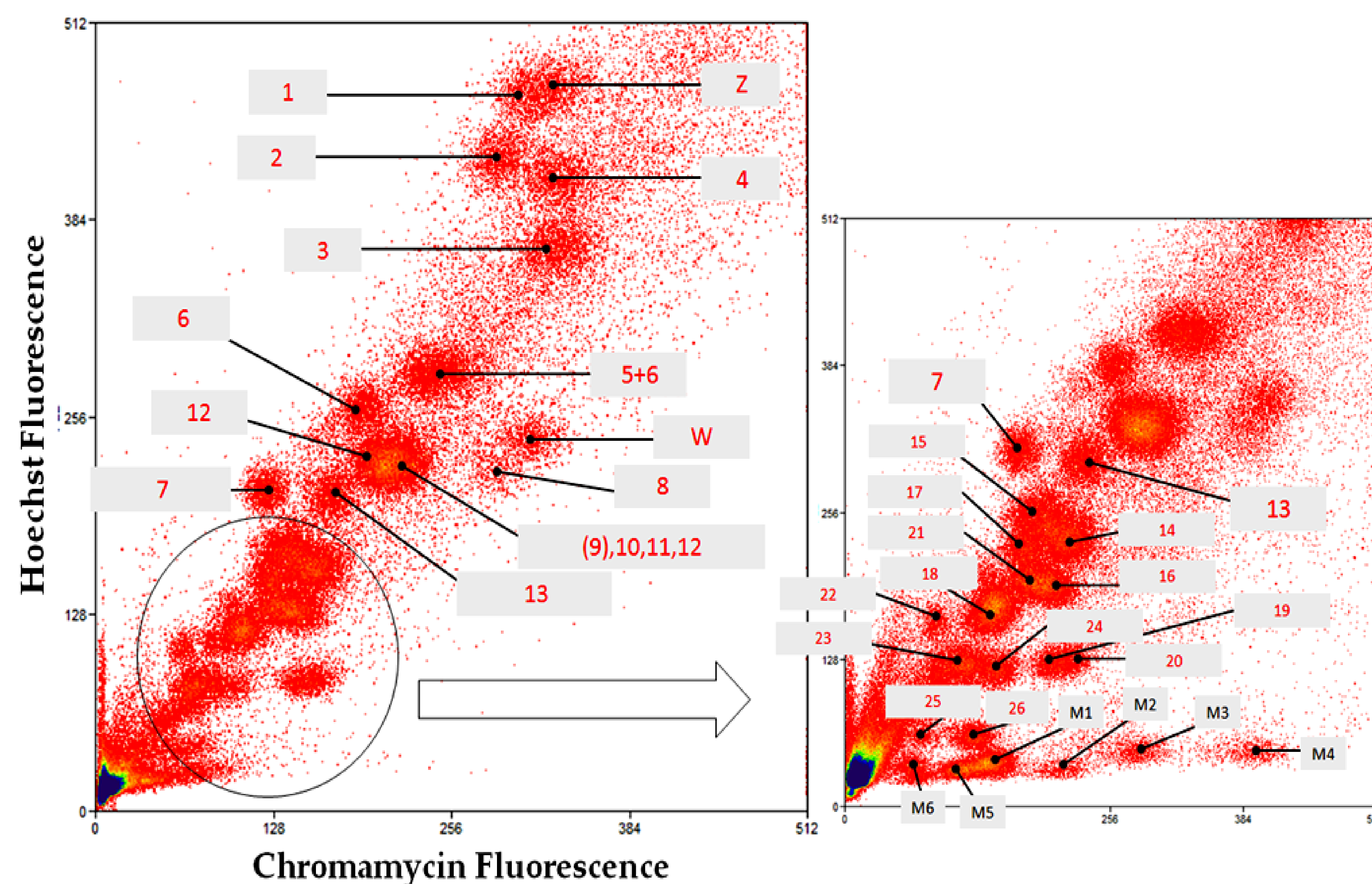


Figure.2 New flow karyotype of *L. albicollis*. Legend: M= Microchromosomes.

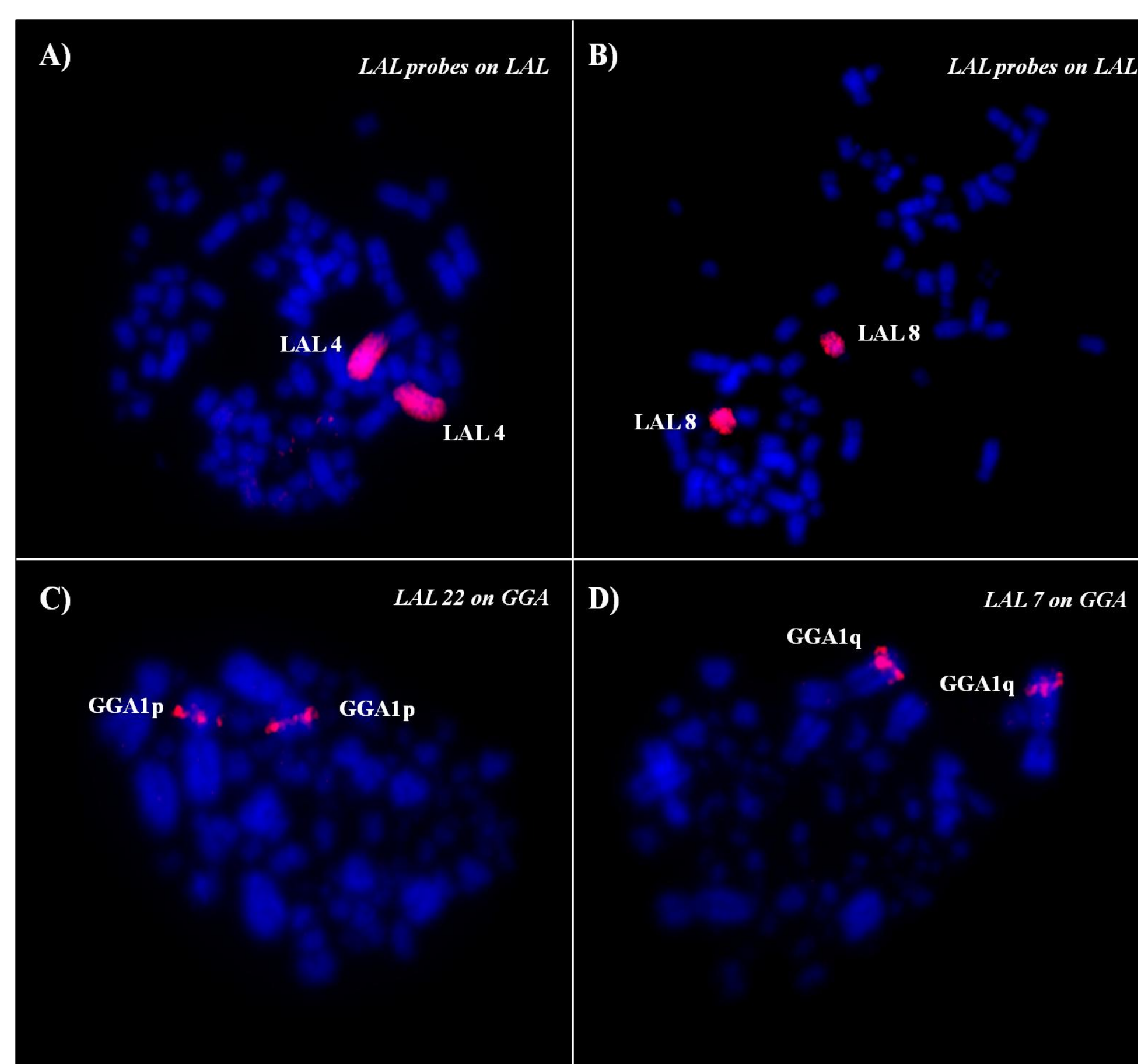
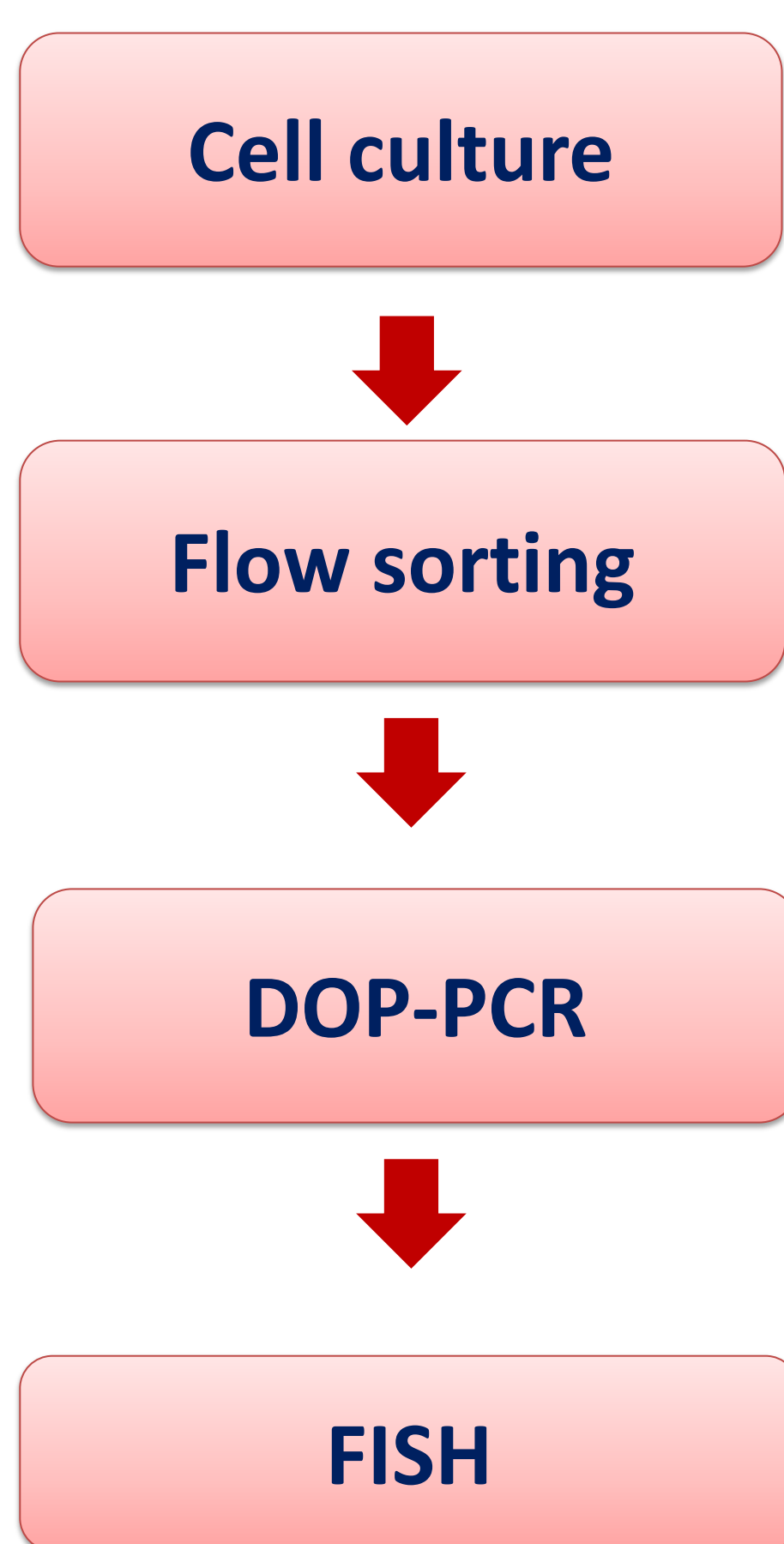


Figure.1 Representative Same-species FISH experiments using *L. albicollis* (LAL) probes: LAL 4 (A), LAL8 (B) and Cross-species LAL probes on *G.gallus* metaphases (C and D)

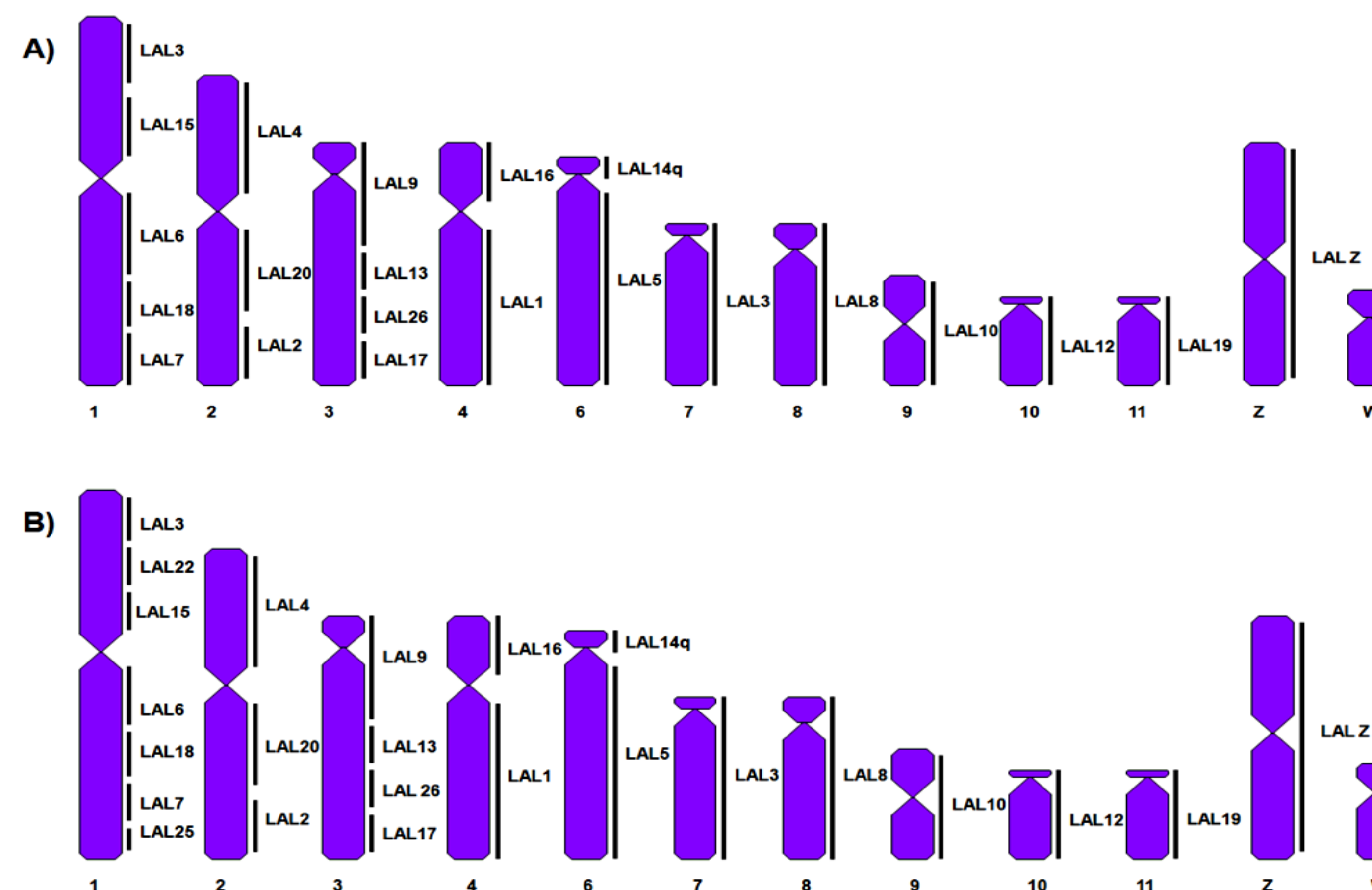


Figure.3 Homology map between chicken macrochromosomes and white hawk paints. (A) The homology described by de Oliveira et al. [4] (B) The new nomenclature has been proposed for the new set of probes from white hawk.

Conclusion

Our results show that microchromosomes 17-28 were involved in fusion events with macrochromosomes. In addition, a new nomenclature has been proposed for the new set of probes and some previous inaccuracies corrected. As an example, ancestral chromosome GGA1 is now shown to have homology to seven white hawk chromosomes rather than five, as homologies to two small chromosomes were missed. In conclusion, the new complete set of chromosome probes will improve the value of this tool for avian comparative cytogenetics.